

CLAIMS:

1. A motion estimation unit (500) for estimating a current motion vector for a group of pixels of an image, comprising:
 - generating means (502) for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of
 - 5 previously estimated motion vectors;
 - a match error unit (506) for calculating match errors of respective candidate motion vectors; and
 - a selector (508) for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion
 - 10 vectors, characterized in that the motion estimation unit (500) is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating this motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors.
- 15 2. A motion estimation unit (500) as claimed in claim 1, characterized in that the selector (508) is arranged to select, from the set of candidate motion vectors, a particular motion vector as the current motion vector, if the corresponding match error is the smallest of the match errors.
- 20 3. A motion estimation unit (500) as claimed in claim 1, characterized in that the match error unit (506) is designed to calculate a first one of the match errors by means of subtracting luminance values of pixels of blocks of pixels of respective images of a first image pair.
- 25 4. A motion estimation unit (500) as claimed in claim 1, characterized in being arranged to calculate the further candidate motion vector on basis of the first motion vector ($V(0,3)$) and the second motion vector ($V(0,2)$), with the first motion vector ($V(0,3)$) belonging to a first forward motion vector field and the second motion vector ($V(0,2)$)

belonging to a second forward motion vector field, with the first forward motion vector field and the second forward motion vector field being different.

5. A motion estimation unit (500) as claimed in claim 4, characterized in being
5 arranged to calculate the further candidate motion vector by means of subtraction of the second motion vector ($V(0,2)$) from the first motion vector ($V(0,3)$).

6. A motion estimation unit (500) as claimed in claim 4, characterized in being
10 arranged to calculate the further candidate motion vector by means of subtraction of the first motion vector ($V(0,3)$) from the second motion vector ($V(0,2)$).

7. A motion estimation unit (500) as claimed in claim 1, characterized in being
arranged to calculate the further candidate motion vector on basis of the first motion vector ($V(0,1)$) and the second motion vector ($V(0,2)$), with the second motion vector ($V(0,2)$)
15 belonging to the second forward motion vector field and the first motion vector ($V(0,1)$) belonging to a third forward motion vector field, with the second forward motion vector field and the third forward motion vector field being different.

8. A motion estimation unit (500) as claimed in claim 7, characterized in being
20 arranged to calculate the further candidate motion vector by means of multiplication of the second motion vector ($V(0,2)$) with a predetermined constant and subtraction of the first motion vector ($V(0,1)$).

9. A motion estimation unit (500) as claimed in claim 1, characterized in being
25 arranged to calculate the further candidate motion vector on basis of the first motion vector ($V(3,4)$) and the second motion vector ($V(3,2)$), with the first motion vector ($V(3,4)$) belonging to a fourth forward motion vector field and the second motion vector ($V(3,2)$) belonging to a first backward motion vector field.

30 10. A motion estimation unit (500) as claimed in claim 9, characterized in being arranged to calculate the further candidate motion vector by means of multiplication of the first motion vector ($V(3,4)$) with a predetermined constant and summation of the second motion vector ($V(3,2)$).

11. A motion estimation unit (500) as claimed in claim 1, characterized in being arranged to calculate the further candidate motion vector (410) on basis of the first motion vector (404) and the second motion vector (408), with the first motion vector (404) and the second motion vector (408) belonging to a particular motion vector field (400).

12. A method of estimating a current motion vector for a group of pixels of an image, comprising:

- a generating step of generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors;
- a match error step of calculating match errors of respective candidate motion vectors; and
- a select step of selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that in the method a further candidate motion vector is added to the set of candidate motion vectors by calculating this motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors.

13. An encoder (600) comprising, a discrete cosine transformer (626), a quantizer (628), a run-level encoder (629) and a motion estimation unit (500) for estimating a current motion vector for a group of pixels of an image, the motion estimation unit (500) comprising:

- generating means (502) for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors;
- a match error unit (506) for calculating match errors of respective candidate motion vectors; and
- a selector (508) for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that the motion estimation unit (500) is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating this motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors.

14. An image processing apparatus (700) comprising:

- receiving means (702) for receiving a signal representing images;
- a motion estimation unit (500) for estimating a current motion vector for a

group of pixels of a first image of the images, comprising:

- 5 - generating means (502) for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors;

 - a match error unit (506) for calculating match errors of respective candidate motion vectors; and

- 10 - a selector (508) for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors; and

 - a motion compensated image processing unit for calculating processed images on basis of the images and the current motion vector, characterized in that the motion

- 15 estimation unit (500) is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating this motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors.